

~~foundations of a housing boom, financed by massive overseas borrowing. Sooner or later, the boom will end, and economic conditions will be less favourable. It is unlikely, however, that Labor can regain office simply by waiting for the government's luck to run out, without offering any alternative strategy. This paper has offered some suggestions, but what is needed is a comprehensive review similar to that undertaken in the late 1970s.~~

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References

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Pursuing the Ubiquity Principle

Tom Clark

Higher education research stands at a kind of half-way house. At present, it is highly directed by Government research priorities. Yet the Government's ambition is to create a much more deregulated system, with self-created winners and losers. Tom Clark suggests a different starting-point. All higher education institutions generate research, and all academic staff should be expected to do so, regardless of where they work. It is better policy to foster the full range of the research resources we have now, rather than allow some research to sink in the pursuit of islands of excellence.

In a previous article for *AUR*, I argued that higher education policy in Australia is at an impasse, which is not exclusive to this country, and which will only be overcome by developing an as-yet-unrealised consensus on the underpinning goals and values of the system.¹ In this article, I examine research funding as an area in which the beginnings of a genuinely sustainable framework might be fashioned. In doing so, I deliberately sidestep debates about the quantum of research funding and about the public/private mix of funding. They are important questions, of course, but I wish to consider a framework for research funding that could sustain a wide range of answers to those questions.

We benefit from being as clear as possible about the prescriptive teleology of our research system, which tends to mean we should keep it simple. The telos, or original goal, of research within a higher education system is to lead scholarship. Australia's university research funding framework does not adhere to this precept. It conflates the original role of research in universities – to lead scholarly teaching and community service – with macro-economic and other public goals for concentrated research activity. These latter goals are often important in themselves, an importance that may have intensified the conflation. Thus, while we have a variety of Commonwealth schemes to support university research, whose total value now approaches

\$6,000 million, the current framework is an unsuccessful amalgam of perverse and countervailing incentives. The vexation they cause sees the so called Research Training Scheme under litigation. It sees the arbitrary measure of research income used to gauge research activity in the humanities, social sciences, and creative arts. And it caused that bizarre policy-on-the-run exercise by which the Commonwealth established and then recalibrated its national research priorities.

We can make several pertinent observations about the policy environment, none of them particularly original, which have a bearing on the research policy framework's capacity to serve those teleologies it sets in mutual competition. First is that between a quarter and a third of Australia's acknowledged research and development investment is made within universities – and most Australian university research is carried out by students. These figures are based on economic data, which measure economic investment, not the quantity or quality of research work carried out. In 2000, the Australian Bureau of Statistics (ABS) estimated that 70% of Australian universities research is carried out by postgraduate students.²

A second observation is that Australia's higher education policy framework is unstable by design, because it has intentionally been constructed as a set of transitional arrangements – a staging post on the way to more radical commodification of higher education services. That is an argument Michael Gallagher has put convincingly on several occasions since he left the public service.³

A third is that Australia has been performing below average in research investment, by OECD standards, at 17th rank out of 29 countries. In 2000–2001, Australia was 18th among 28 countries for Business Expenditure on Research and Development (BERD).⁴ Australia has developed no effective policy to raise BERD. While we are still looking to develop an answer on that front, our performance continues to fall behind. Australia's investment in R&D as a proportion of GDP actually went backwards significantly between 1995 and 1998 – while most OECD countries were heading the other way.⁵

In a related point, entrepreneurship seems, at best, an unreliable contributor to university R&D coffers for the foreseeable future. Many Australian universities have pushed to increase the spin-off and commercialisation potential of the research conducted by their students and staff. Still, growth in the commercialisation of publicly funded R&D from 1998 to 2003⁶ was much slower than the growth in domestic undergraduate full fees ('DUFF') over the same period.⁷ Without government-subsidised loans (that is, a 'HELP effect'), or a similarly radical circuit-breaker, commercialisation growth will remain slow in the long term.

Fourthly, the biggest crisis facing Australian scholarship is one of generational renewal.⁸ University managements and supra-institutional funding authorities alike have failed to recognise or resolve a crisis of staff ageing and resource decay.

It has attacked the foundation disciplines⁹ most keenly. Post-graduate research has not grown substantially since 1997.¹⁰ Research higher degree commencements have been stable at around 9,100, despite significant growth elsewhere in the system – especially postgraduate coursework. Peter Andrews, Queensland's Chief Scientist, has argued Australian universities need to turn out something like 75,000 science higher degree completions by 2010, in order to match OECD competitors.¹¹ Targets for our current system start looking ambitious before the 15,000 mark.¹² That discrepancy – which, naturally, is feeding the generational crisis – is an extremely strong argument for harnessing the ubiquity principle.

At the same time, internationalisation of Australia's higher education system has tended to be prolific, but shallow, and commercially led.¹³ Since 1990, institutions in Australia have keenly developed their international offerings in fee-returning areas of coursework degrees and degree-enabling programs, especially Business and IT – notwithstanding a recent dropoff in IT enrolments. There has been relatively little flow-through to the foundation disciplines – or student and staff research activity. Internationalisation of enrolments has done nothing to arrest Australia's rapid downwards slide in language enrolments.

Conversely, Australia faces a long-term net loss of academic labour. ABS figures show the level of long-term emigration, including 'permanent' emigration, rose much more rapidly than comparable immigration rates during the late 1990s. It is noteworthy that the qualifications levels of emigrants are generally higher than those of immigrants.¹⁴ Of course this is overstated somewhat by the tendency of Australian accrediting bodies to doubt or underestimate the qualifications of immigrants. Still, in the current academic labour market – and again, this is especially true in the foundation disciplines – there is typically more on offer for an Australian to leave than for a foreigner or an expatriate Australian to arrive. While it is generally good for both individuals and the system if scholars spend time working abroad, the system would like them to come back in greater numbers and at younger ages than they do.

These starting observations take the form of challenges to a policy approach, insofar as they indicate a lack of coherence, sustainability, responsiveness, cost-effectiveness, fairness and equity, transparency, and accountability within the system as currently framed.¹⁵ Another way to create challenges for the policy approach is to set out axioms or objectives of policy. This paper is consciously guided by two.

First, if our funding system is to encourage research activity generally, which is a socially progressive agenda, the system has to fund research activity wherever it is likely to occur. That requires a form of conservatism – a lack of positivism – in judging what kinds of research activity are most beneficial. It also requires a form of liberalism – a lack of interference – with regard to the decisions that scholars and their publishers make.

Secondly, research activity is (or should be) a constant of scholars and of higher education institutions across the board.¹⁶ A research-led pedagogy is a requirement for any learning that claims the rather pompous title, 'higher.' Not every university needs to be intensive in its development of research infrastructure. But all scholars must be expected to research – and to share the benefits of their research publicly. Just as the scholarly curriculum is the definitive characteristic of a grammar school – a rather successful brand in today's secondary education market, especially if we include the academically selective state schools – so the teaching-research nexus is definitive for a university. For the present purposes, we can call this axiom the 'ubiquity principle of university research.'

At a macro-policy level, the rationale for ubiquity is quite strong, if we can get over a certain scepticism about its yearning quality. The ubiquity principle for university research policy is sympathetic to academic workforce aspirations (which may be an optimistic take on the scepticism). At the same time, as we shall see, it does not drain significant resources away from the intensive research that is performed in a select group of university departments and centres. Ubiquity is conducive to disciplinary diversity in the research effort, due to the size of the low-capital-cost research system¹⁷ it can sustain. And it is a superb vehicle for maximising the research productivity of all universities, because of its efficiency: the capital requirements for ubiquitous research are predominantly met by the capital already provided for university teaching, community service, and administration functions.

Despite sharing many of my starting points with Gallagher, then, I have a rather different sense of how to proceed. This reveals different understandings of the 'critical mass' or 'intensity' principle – that a concentration of resources intensifies productivity.

Concentration is inevitably mitigated by the axiom of ubiquitous scholarship. All universities are research-active institutions, if not necessarily research-intensive, because higher education is research-led. How do we make this ubiquity a strength, rather than a weakness? How do we set a critical mass approach that builds, and builds upon, a diverse and ubiquitous research base, instead of sucking it dry?

We must find a balance between funding for research-intensive centres and funding for research activity across the board. This is admittedly a reconfiguration of the distinction between research-intensive and teaching-only institutions, but we should not overestimate its subtlety. It is an attempt to give practical, rather than romantic, support to the ubiquity principle, while at the same time recognising that research is directly geared to achieve other ends in addition to scholarship — ends that are typically better served by more intensive investment in researchers and their resources than the ubiquity principle should (or, speaking pragmatically, can) be used for.

A system that supported ubiquitous research as one-third of academic staff activity, plus research courses as a set proportion of the student cohort, would be fairly straightforward to fund. At this level, the main policy challenge is to distribute workloads and higher degree places appropriately. In a public and private university system with a turnover of \$x (not including competitive grants, consultancies, BERD, revenue from research commercialisation, or philanthropic research funds), the 'ubiquity research' component should be a set proportion. I shall not hazard a stab at a fraction here, but it could be done quite finely given sufficient data and modelling.

Now, other goals may be attributed to university research, as mentioned, such as the solving of public and/or commercial problems. If such goals recommend approaches that conflict with the ubiquity principle, they should be pursued through separate policy and funding frameworks. Currently, these quite different goals are conflated in a policy framework that creates perverse incentives and arbitrary outcomes.

So, unlike Gallagher – not to mention Kemp and Nelson – I do not advocate lifting the whole research funding framework away from the higher education funding framework. Rather, I propose that any separate research framework should focus on intensive research – that is, on research activity above and beyond the ubiquitous. That accommodates the tendency for research-only funding systems to be driven by competitive performance measures (rewarding success with the means for further success), while ubiquitous research activity needs to be funded as a core element of university scholarship. Intensive research tends to take place in institutes and other non-teaching centres, but all teaching departments of all universities would be expected to maintain a minimum of research activity and postgraduate research education, which requires new investment only to the extent that the university system as a whole does.

I envisage a system, then, where the debate about ubiquitous research funding is principally a debate about the size of the university system overall. The debate about intensive research funding will at least continue, or preferably progress, the current debate about the total value and distribution of competitive grants, BERD, research commercialisation, consultancies, and philanthropic research funds. That will doubtless continue to involve national research priorities. The Government introduced these (bear in mind that the Australian Research Council's (ARC) Linkage program is itself effectively a national research priority) and the Labor Party has claimed it will make improved and possibly increased use of them if elected.¹⁸ The main purpose of this 'ubiquitous/intensive' distinction is to find a more sustainable formulation for adequately funding both, and for adequately discriminating between, predominantly curiosity-driven research with a low capital cost on the one hand, and the more intensively capitalised research which is commanded by its public and/or commercial interest on the other.

When we consider how to fund it, a great strength of this approach is its ability to adapt to the contours of different private/public funding mixes. Ubiquitous research would be proportionate to the scale of each university, regardless of funding sources. Intensive research would be driven by a system-wide target for quantum. Perhaps the most pragmatic virtue of this distinction lies in the clarity with which we can focus on intensive research as the dynamic location for a debate about national research investment. If the country decided to engage in more research activity, say, then the intensive research system would become unambiguously the main vehicle for delivering that.¹⁹ By an optimistic reading, such an increase would combine BERD, revenue from university commercialisations, consultancies, and philanthropic sources with increased national and international competitive grants revenues. A pessimistic reading would focus on national competitive grants.

The resourcing of this proposed framework requires that policy consolidate a stable funding and reporting framework for ubiquitous research. Universities and funding agencies alike should be obliged to demarcate a clear research component of higher education funding, separate from research-only funds, and notionally distinct from funds for teaching and community service. Outside of special circumstances, this component should remain a fixed proportion of basic operating funds: Commonwealth grants, fee revenues, and the like. This implies at least three elements:

1. Postgraduate research education – which is much more than the name ‘research training’ implies – should be a component of basic operating funds. There is some wisdom in maintaining a separate system of funding for the Australian Postgraduate Award and International Postgraduate Research Scholarship – especially if it becomes possible to award them nationally, through the Australian Research Council. There may be value in funding additional postgraduate research places within the research-intensive framework – although enabling long-term postdoctoral careers, and bringing working conditions for research-only staff up to the general academic standard, looks a more urgently needed use for such funds. If there was a criticism of the Labor Party’s 2004 election platform promise of 300 new research-and-teaching postdoctoral fellowships, aimed principally at career development,²⁰ it was that the system could do with about five times that number. One thousand five hundred fellowships would mean approximately 20-25% of APA holders could expect to be employed as national postdoctoral fellows after completing their higher degrees, with some room to recruit fellows from other backgrounds as well. A well-directed funding system would aim to preserve such a proportion, rather than any fixed number of fellowships.

2. Time for teaching staff to conduct curiosity-driven research, including sabbatical leave programs, should receive dedicated funding through basic operating funds, since it is central to scholarship. It should be an explicit component both of grant allocations and of university financial reports.
3. Basic research infrastructure (eg libraries) should receive dedicated funding through basic operating funds as well, since it too is central to scholarship. It too should be an explicit component both of grant allocations and of university financial reports.

At the same time, guaranteeing the integrity of this proposed framework requires that policy establish and uphold minimum quality requirements for the scholarly system as a whole. Ubiquitous research would perform an acknowledged leadership function in this framework, meaning that its scholarly integrity would be particularly important, and that its relation to the rest of the system would need to be clear. Thus accounting for the quality and quantity of non-competitive research undertaken within a university should be combined with methods of accounting for academic quality more broadly.

Quality assessment becomes more important, not less so, when the ubiquity principle becomes a policy axiom. We know that research productivity is extremely lumpy within and between Australia’s academic departments, although the data only show it imprecisely. This in itself constitutes a major challenge to the credibility of the ubiquity principle. If the object of policy is to increase research activity, smoothing the lumpiness requires that departments, faculties, and institutions make the ubiquity assumption a reality – and that the Commonwealth be assured of this.

We now know that a research assessment exercise in Australia is imminent. While such a rigorous (but laborious) exercise has the potential to measure and validate ubiquitous research, it would be wiser to extend a peer review quality process to cover all scholarly activity (including ‘community service’), unlike the United Kingdom’s bifurcated quality systems for teaching and research.

Guaranteeing the scholarly integrity of ubiquitous research also requires at least 3 elements:

1. Research quality appraisals urgently need to reduce their dependence on lagging measures (simple measures of funding inputs and aggregated outputs), instead developing leading measures (such as cross-referencing research achievements against age and seniority profiles). This point applies equally strongly to the intensive research system. For example, the ARC’s reliance on measures of individual track record, especially publications, in allocating its Linkage and Discovery grants has contributed significantly to the nationwide logjam in research career development.
2. Universities must get serious about developing their department and faculty management staff, so that profes-

sional staff leadership is the norm, rather than the exception, in the places where research work is actually done. Smoothing out the lumpiness in academic research productivity – one of the biggest challenges for the ubiquity principle – will not be achieved without the skilful and active participation of those department and faculty management staff.

3. The push to improve research student supervision across the board must continue and succeed. Some universities have advanced much further than others down this path – they show us one of the most welcome consequences of the RTS emphasis on completions. The ubiquity system needs to normalise well trained and properly accredited supervision.

In conclusion, I would like to return the argument to an important paradox mentioned in the introduction to this article: how can one safeguard or advance the quality of research without safeguarding or advancing the value of research funding? There are answers to this question, although none are satisfactory as a basis for long-term policy. Indeed, the generational crisis that Hugo identifies (see above) may mean ‘safeguarding’ is no longer an option. Like the NTEU, I believe Australia must choose whether to make a major investment in the scholarship of its universities or continue a steady decline. But that is a background dispute: it does not override the central argument here.

The ubiquitous/intensive policy approach I have outlined, without adequate funding support, would be an ameliorative framework – palliative care for the research effort at Australian universities. And yet, even that bleak outlook seems preferable to the status quo. On the other hand, as a funding model for expansionary reinvestment in Australia’s university research effort, there is no substitute for developing clear goals, which are sympathetic to the efforts and aspirations of researchers in universities, and sticking to them. The ubiquitous/intensive approach seeks to construct a long-term, recurring choice between investing for healthy new growth and salvaging the gentlest of underfunded decays.

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Acknowledgement

This article is based on a presentation given to the 2nd Monash 2004 Seminar on Higher Education Policy, 3 August 2004. I am indebted to Emmaline Bexley, Julie Connolly, and David Burchell for their comments on earlier drafts of the article.

Endnotes

1 Tom Clark, ‘Under no circumstances resolve the main problem: the higher education policy overview in Australia,’ *AUR* 46/2 (2004), 12-15.

2 ABS, Research and Experimental Development, Higher Education Organisations Australia, ABS paper 8111.0, ABS, Canberra, 2000, p.6.

3 See for example his paper to the Monash 2004 Seminar on Higher Education Policy, 3 August 2004: <http://www.education.monash.edu.au/centres/mcrie/Gallagher%20on%20Hi%20Ed%20policy%20040706.rtf> (accessed 20/4/2005), pp.2-3.

4 Taken from ABS figures: <http://www.abs.gov.au/Ausstats/abs@.nsf/Lookup/71D620AE73D5660DCA256DEA00053A0D> (accessed 20/4/2005).

5 M. Considine, S. Marginson, and P. Sheehan, *The comparative performance of Australian as a knowledge nation*, Chifley Research Centre, Canberra, 2001, p.37.

6 The Allen Consulting Group, *The economic impact of the commercialisation of publicly funded R&D in Australia*, The Australian Institute for Commercialisation, Brisbane, 2003, Chapter 4.

7 This is drawn from DEST statistics: in 1998 Australian universities reported 449 EFTSU in DUFF enrolments. In 2003 the number was 10,898: <http://www.dest.gov.au/bighered/statpubs.htm> (accessed 4/8/2004). Admittedly, the latter number has been (intentionally) distorted by the University of Melbourne’s practice of reporting its undergraduate scholarship holders as DUFF enrolments.

8 This analysis draws on a demographic argument by Graeme Hugo has outlined on several occasions, including his presentation to the 3rd Monash seminar on higher education policy: <http://www.education.monash.edu.au/centres/mcrie/2004policyseminars.htm> (accessed 20/4/2005).

9 ‘Foundation disciplines’ is of course a rather loose phrase. I mean it to indicate those traditional disciplines of the academy which are taken as a theoretical basis for the more applied scholarship that has flourished in universities around the world since 1945: disciplines such as physics, pure mathematics, languages and literature, and philosophy.

10 DEST statistics.

11 Cf. *New Scientist*, 13 March 2004, 47. The article actually quotes Andrews as calling for 85,000 extra scientists.

12 DEST statistics.

13 These arguments have been set out by Simon Marginson, among others. See for example his ‘Nation-building universities in a global environment: the case of Australia,’ *Higher Education* 43, (2002). 409-428.

14 <http://www.abs.gov.au/Ausstats/abs@.nsf/94713ad445ff1425ca25682000192af2/74cb84b5a3e3ea9ca2569de002139c6/OpenDocument> (accessed 20/4/2005).

15 Criteria derived from Gallagher’s presentation to the first seminar in the Monash 2004 series, op. cit., p.1. Their succinctness and breadth as an exposition of contemporary policy doctrine is memorable.

16 This has been a guiding dictum for the Higher Education Research and Development Society of Australasia. eg, Angela Brew, ‘Understanding Research-led Teaching,’ *HERDSA News* 25/1 (April 2003), 1 & 3-5.

17 As distinct from a high-capital-cost or ‘intensive’ research system, discussed further in this paper.

18 See pp.29f of the ALP policy discussion paper, *Research: Engine Room of the Nation*. http://www.alp.org.au/dload/federal/media/senator_kim_carr_research_paper.pdf (accessed 4/8/2004).

19 By comparison, a move to increase or decrease ubiquitous research relative to other higher education funding would be principally a debate about the role and nature of university scholarship.

20 See p.18 of the ALP policy document *Aim Higher*. http://www.alp.org.au/dload/federal/media/education_policy.pdf (accessed 4/8/2004).

21 <http://www.naf.org.au/proceedings/researchexcellence/batterham.htm> (accessed 20/4/2005).